AMENDMENTS TO THE SPECIFICATION

Please amend the paragraph beginning at page 15, line 26, as follows:

Referring now to FIG. 1 to FIG. 3, an arrangement of a pipe arrangement (pipe laying) inspecting apparatus corresponding to a nondestructive inspection apparatus, according to a first embodiment of the present invention. FIG. 1 is a schematic block diagram of the pipe arrangement inspecting apparatus according to this first embodiment. In this drawing, reference numeral 1 shows a guided wave transmitting/receiving element, namely, such an element which is commonly used as a transmitting element and a receiving element. The transmitting element is employed when a guided wave is generated, whereas the receiving element is employed when a reflection wave of this guided wave is received. Also, reference numeral 2 indicates a transmitting/receiving element ring, reference numeral 3 shows guided wave transmitting/receiving means, and reference numeral 4 represents an A/D converter. Reference numeral 5 shows waveform forming/analyzing means, reference numeral 6 indicates input means, and reference numeral 7 represents display means. It should be understood that a guided wave is defined as an elastic wave, namely an ultrasonic wave. This elastic wave is formed by interference occurred between longitudinal waves and shear waves, which are propagated through an object having a boundary plane such as an arranged pipe and a plate ~~such an object having a boundary plane as a pipe arrangement (pipe laying) and a plate~~, while modes of the longitudinal waves and the shear waves are converted, and also both the longitudinal waves and the shear waves are reflected. In the guided wave transmitting/receiving element 1, a commonly-used piezoelectric element is employed as the transmitting element when the guided wave is transmitted, and also, is employed as the receiving element when the reflection wave is received. Alternatively, while a piezoelectric element exclusively used as a transmitting element is provided in the vicinity of a piezoelectric element exclusively used as a

receiving element, these transmitting element and receiving element may be exclusively used, depending upon a transmission mode and a reception mode.

Please amend the paragraph beginning at page 17, line 12, as follows:

The guided wave transmitting/receiving element 1 corresponds to such an element capable of generating guided waves in a pipe arrangement (pipe laying) 9, and is constituted by, for example, a piezoelectric element. The guided wave transmitting/receiving element 1 is arranged in contact with the pipe arrangement 9, and is electrically connected via a coaxial cable to the guided wave transmitting/receiving means 3. The transmitting/receiving element ring 2 corresponds to such a jig which grips a plurality of guided wave transmitting/receiving elements 1 on a peripheral portion of the pipe arrangement 9 in a circular ring shape. Preferably, this transmitting/receiving ring 2 [[owns]] <u>has</u> such a structure that the plural guided wave transmitting/receiving elements 1 are stored in an equi-interval along a circumferential direction, and is detachably mounted with respect to the pipe arrangement 9. The transmitting/receiving element ring 2 has such a 1/2-divided construction that a ring-shaped frame is cut along a diameter of this ring. The 1/2-divided edges are coupled to each other by way of a screw so as to be assembled in a ring shape. As a result, when the ring-shape frame is assembled along the outer peripheral portion of the pipe arrangement 9, this transmitting/receiving element ring 2 is mounted on the outer peripheral portion of the pipe arrangement 9. A plurality of guided wave transmitting/receiving elements 1 are stored in an inner side of the ring-shaped frame of this transmitting/receiving element ring 2, and are supported by such a spring which is extended/compressed from the ring-shaped frame of the transmitting/receiving element ring 2 toward the outer peripheral plane of the pipe arrangement 9. As a consequence, when this transmitting/receiving element ring 9 is mounted on the outer peripheral plane of the pipe arrangement 9, a plurality of guided wave transmitting/receiving elements 1

are depressed against the outer peripheral plane of the pipe arrangement 9 by way of this spring, so that guided waves may be readily generated from these guided wave transmitting/receiving elements 1 with respect to the pipe arrangement 9.

Please amend the paragraph beginning at page 23, line 22, as follows:

At a first stage, the Fourier transform is performed based upon a formula (1) with respect to a reference waveform "u(t)" (see FIG. 7A) so as to calculate a complex Fourier component "U(ω)." A waveform shown in FIG. 7D corresponds to such a waveform which is [[wanted]] intended to be received by a [[recepting]] receiving element, and this waveform of FIG. 7D becomes a waveform equivalent to the reference waveform "u(t)."

$$U(\omega) = \frac{1}{2\pi}\int_{-\infty}^{\infty} u(t)e^{-i\omega t}dt \text{ ----- formula (1)}$$

Please amend the paragraph beginning at page 24, line 2, as follows:

Next, a phase delay is applied to the complex Fourier component "U(ω)", and an inverse Fourier transform is carried out with respect to the resulting complex Fourier component so as to calculate a calculated waveform "u (2d, t)" (see FIG. 7D) after the reference waveform "u(t)" is propagated over a distance "2d" (formula (2)). This phase delay corresponds to a time duration when the reference waveform "u(t)" is propagated in a reciprocating manner over a distance "d" (namely, distance defined from guided wave transmitting/receiving element 1 to center of inspection region "R"), namely a time duration when the reference waveform "u(t)" is propagated over the distance "2d." Finally, the calculated waveform "u (2d, t)" is time-inverted in accordance with the following formula (4), so that a transmission waveform "u' (t)" (see FIG. 7C). When the

waveform u' (t) is transmitted at a position of X=O, the waveform is changed to a waveform of Fig.7D which is equivalent to the reference waveform u(t).

Please amend the paragraph beginning at page 26, line 2, as follows:

Since the guided wave transmitting/receiving element 1 to which the transmission waveform is applied is mechanically vibrated, this guided wave transmitting/receiving element 1 excites a guided wave 8 with respect to the pipe system 9. While the guided wave 8 is propagated through the pipe system 9 along an axial direction thereof, a component of this guided wave 8 which is reflected from a discontinuity ~~discontinued~~ point D(0) such as a crack and a reduced wall thickness is received by the guided wave transmitting/receiving element 1, and then, the received component is entered as a received waveform to the guided wave transmitting/receiving means 3. The guided wave transmitting/receiving means 3 amplifies the received waveform, and then sends the amplified received waveform to the A/D converter 4.